

FIG. 1

Network with  
Various Uncorrelated  
Load Balancing Algorithms

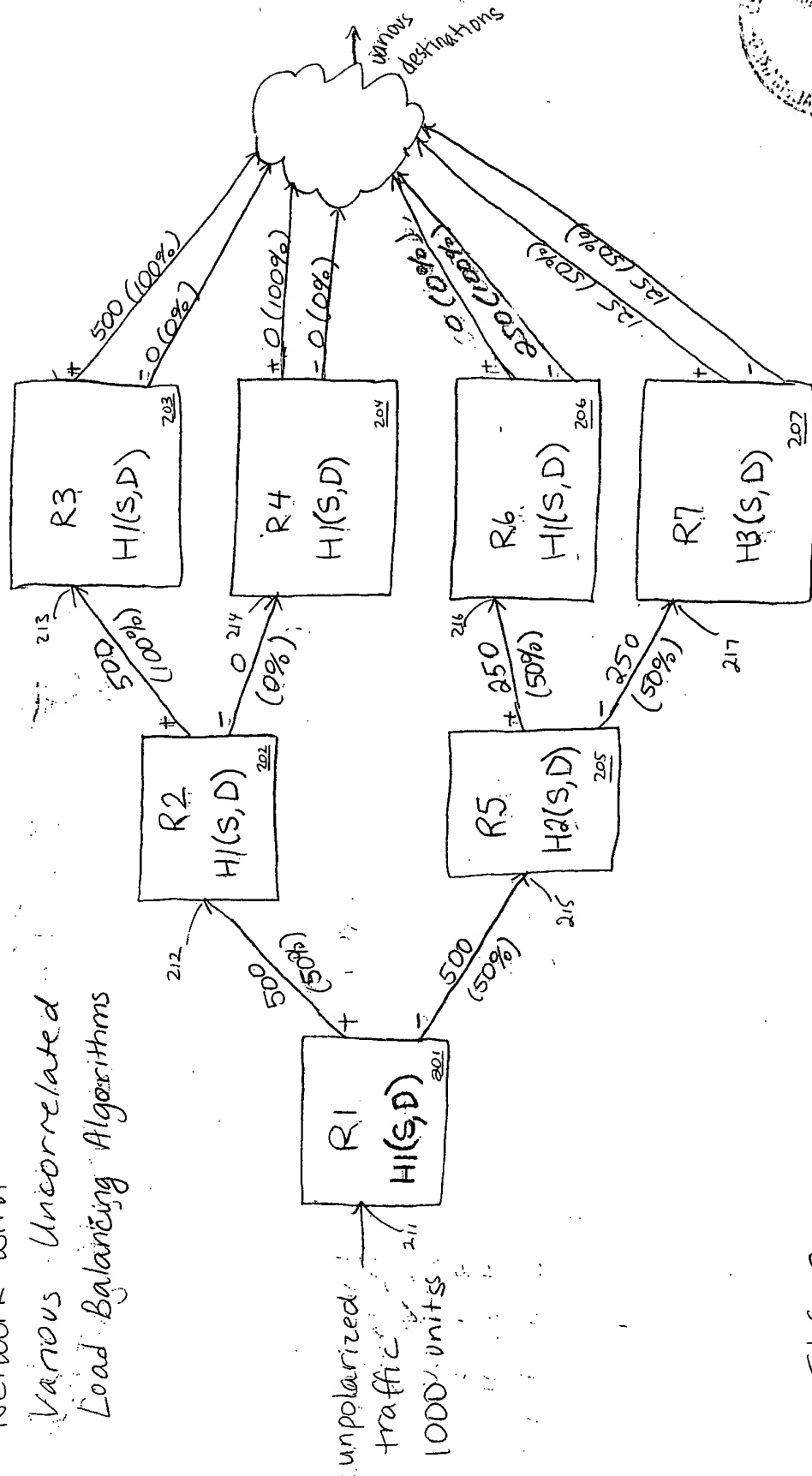


FIG. 2



### SAMPLE HASH BUCKET SETUP

	Hash Bin - Equal Load Balancing															
Npath	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
3	0	1	2	0	1	2	0	1	2	0	1	2	0	1	2	x
4	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3
5	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	x
6	0	1	2	3	4	5	0	1	2	3	4	5	x	x	x	x

For the case of unequal load balancing, paths can be assigned to the hash bin taking account of the weightings. For example, for Npath=2, using one path twice as much as another, using 16 bins, the bins can filled in as {0,0,1,0,0,1,0,0,1,0,0,1,0,0,1,0}. This is not exact but matches the weights closely. Alternatively N\_bin can be set to 15 and the bins filled in for example as {0,0,1,0,0,1,0,0,1,0,0,1,0,0,1}.

FIG. 3

Network with  
Nonstatic - Randomized  
Load Balancing Algorithms

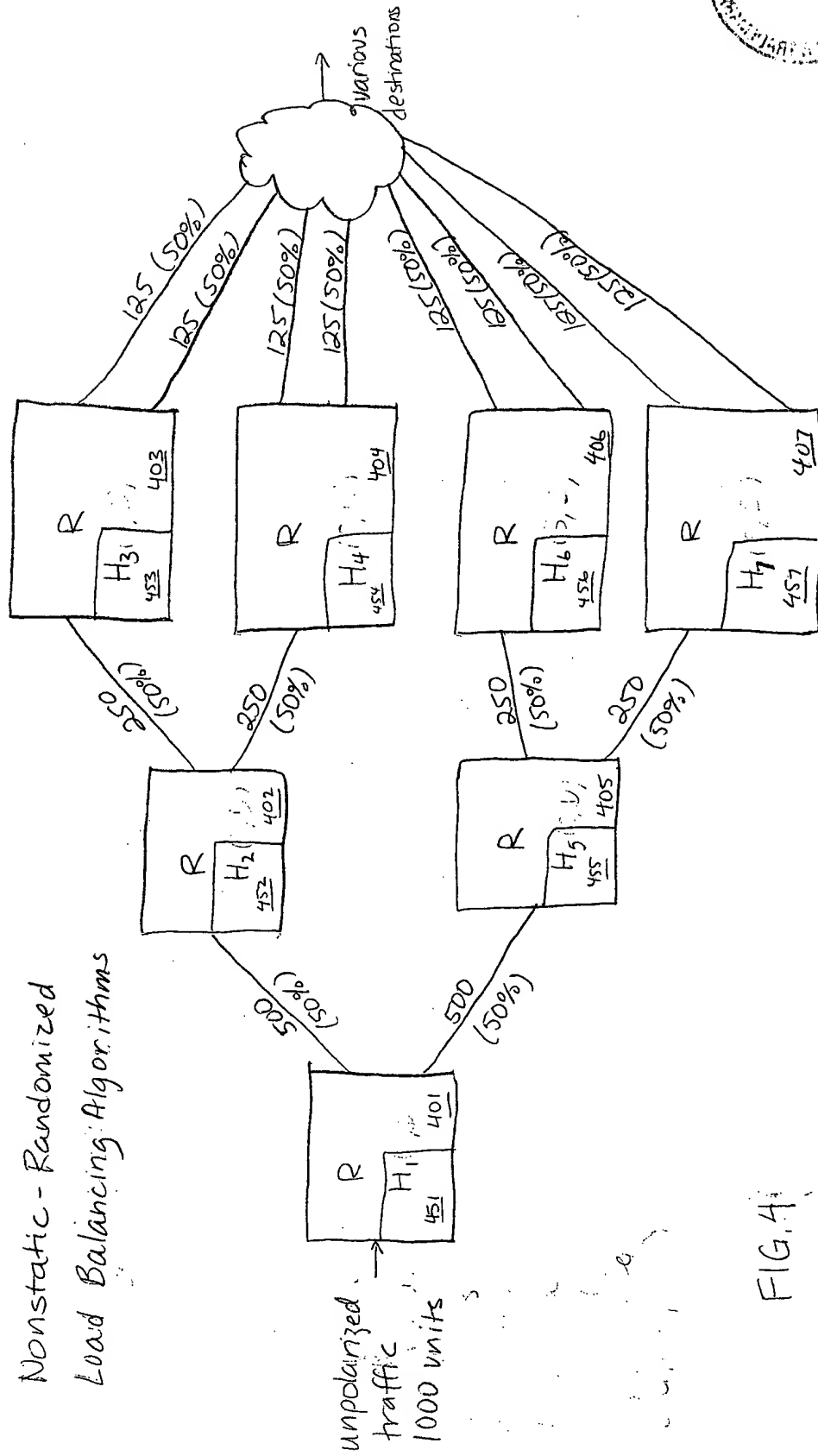
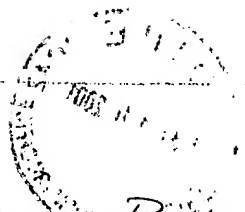


FIG. 4



# Load Balancing a Packet

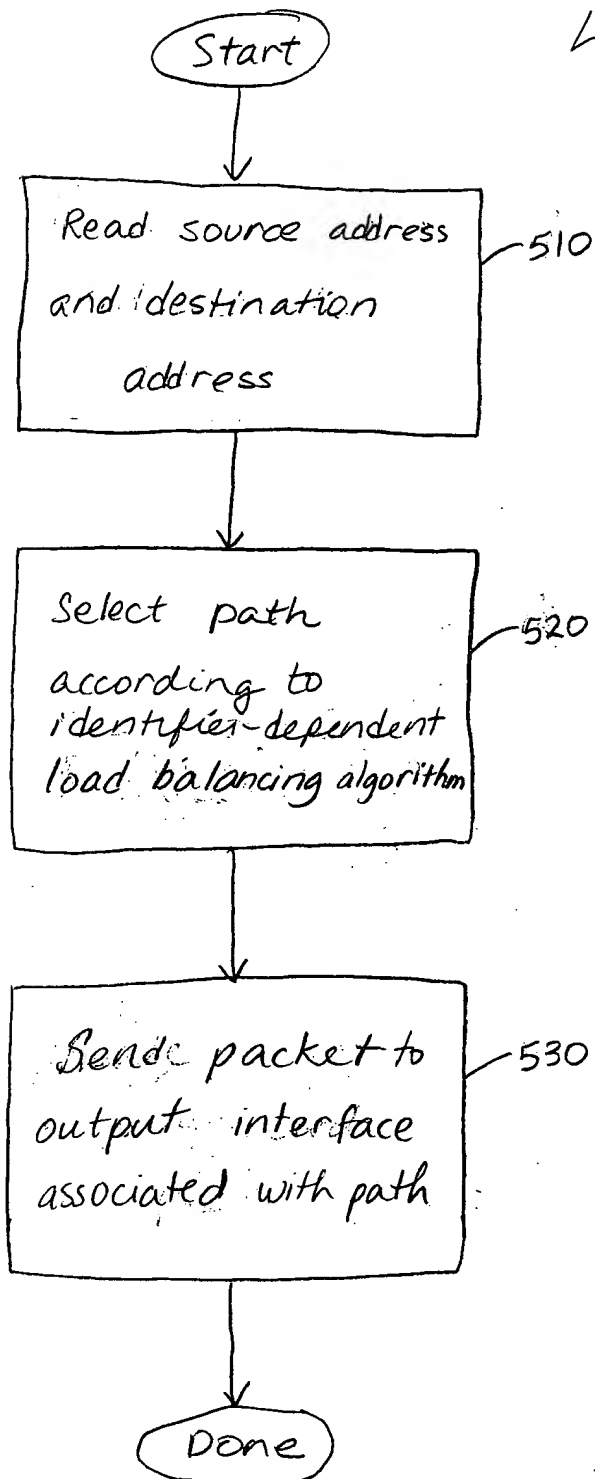


FIG. 5



# Router

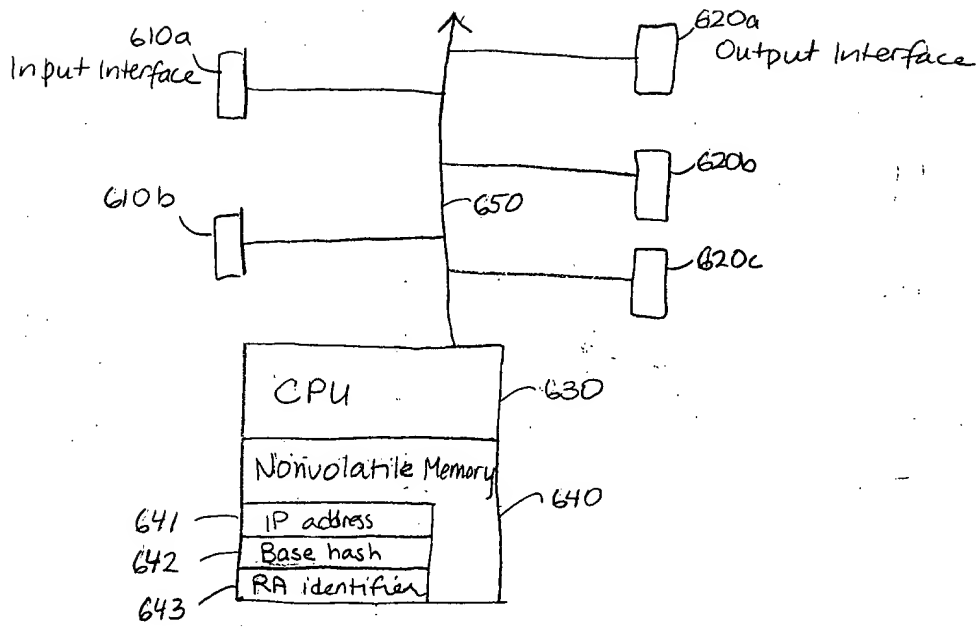


FIG. 6



Assigning an Identifier  
to a Router

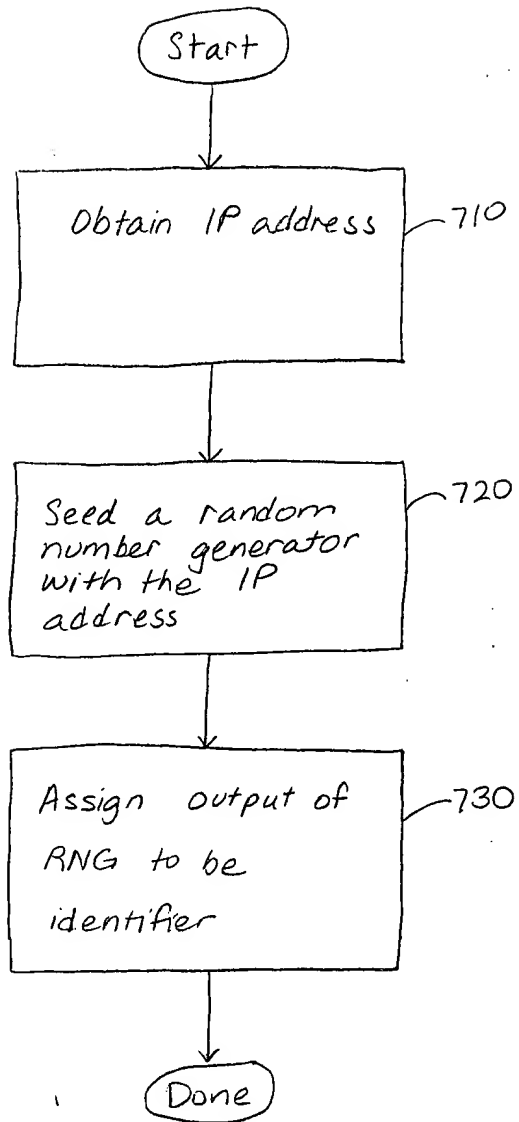
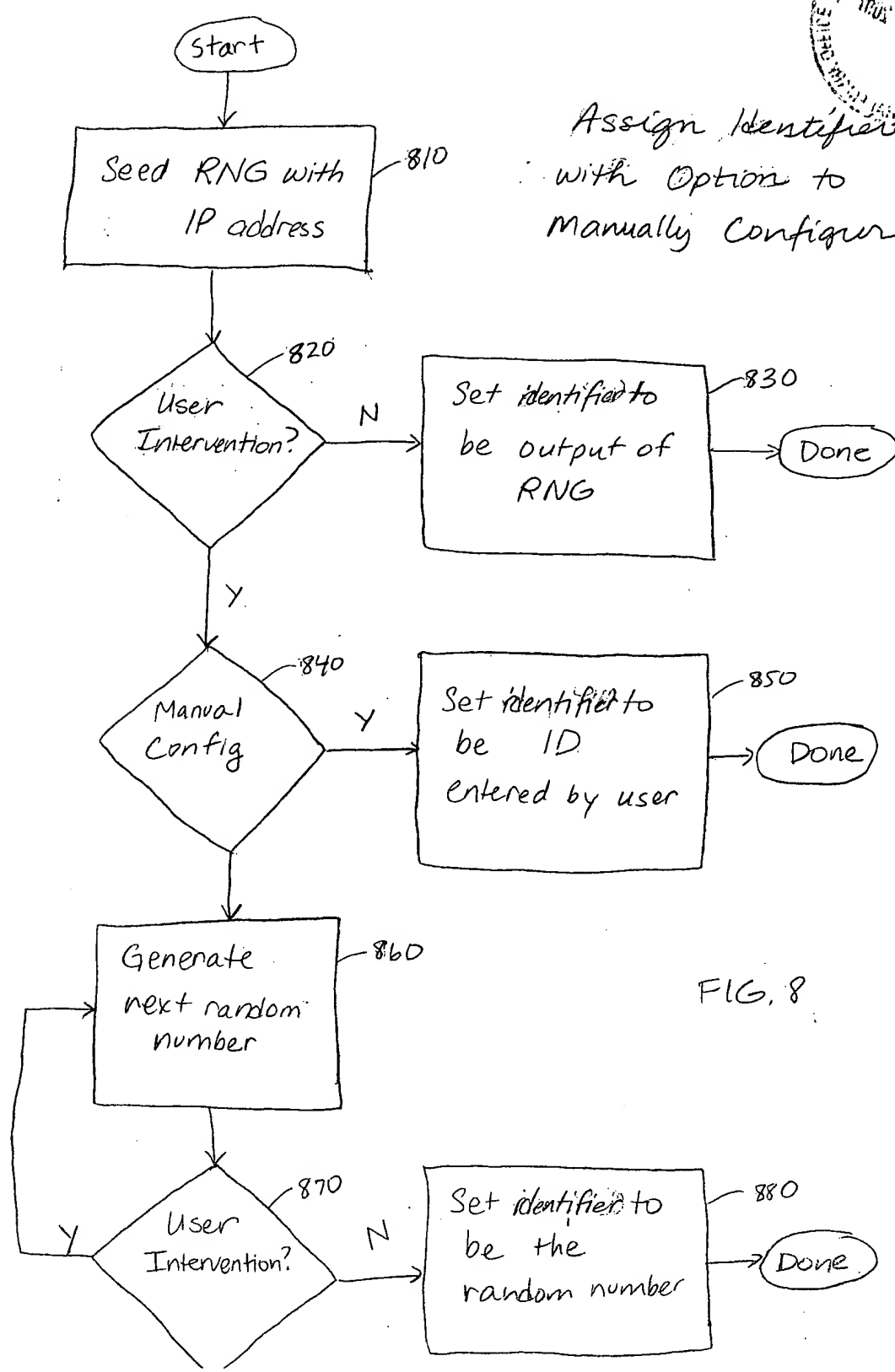


FIG. 7



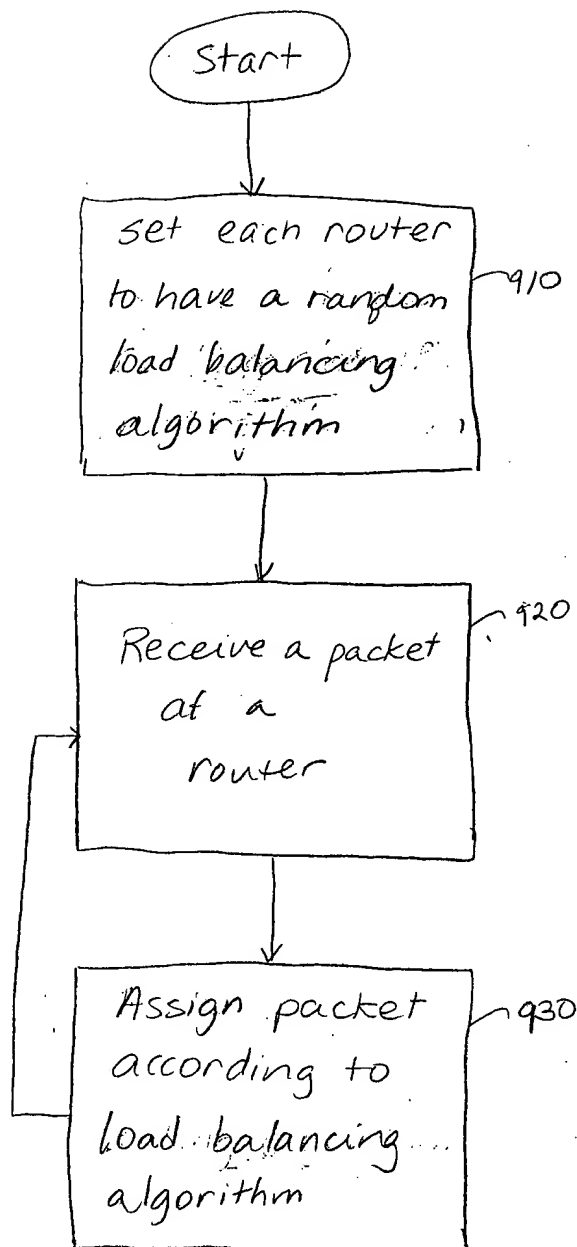
Assign Identifier  
with Option to  
Manually Configure

FIG. 8





Providing Load Balancing  
With Reduced  
Polarization Effects in  
a Network



Repeat Steps 820-830  
until no packet  
remains.

FIG. 9

Configuring a  
Plurality of  
Configurable Routers

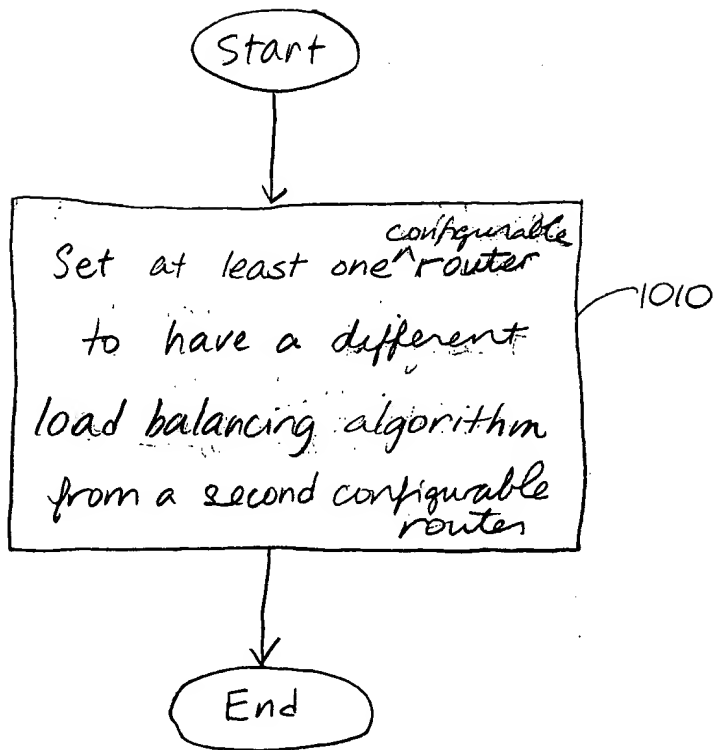


FIG. 10



## Initial Hash Table

Entry	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0
3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	1	0
4	4	4	4	4	4	4	4	4	4	4	4	4	0	1	0	0
5	5	5	5	5	5	5	5	5	5	5	5	0	1	2	1	0
6	6	6	6	6	6	6	6	6	6	6	0	1	2	0	0	0
...																
65535	16	0	1	2	3	8	5	6	7	1	3	0	3	0	1	0

row  
number

Each box is 4-bits of  
a 64-bit entry

FIG. 11



Table of Shifts	
index	shift value
1	0
2	4
3	8
4	12
5	16
6	20
7	24
8	28
9	32
10	36
11	40
12	44
13	48
14	52
15	56
16	60

FIG. 12A



Table of Shifts	
index	shift value
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	4
13	0
14	0
15	8
16	12

FIG. 12B

Generating a  
Randomized  
Hash Table  
From an Initial  
Hash Table

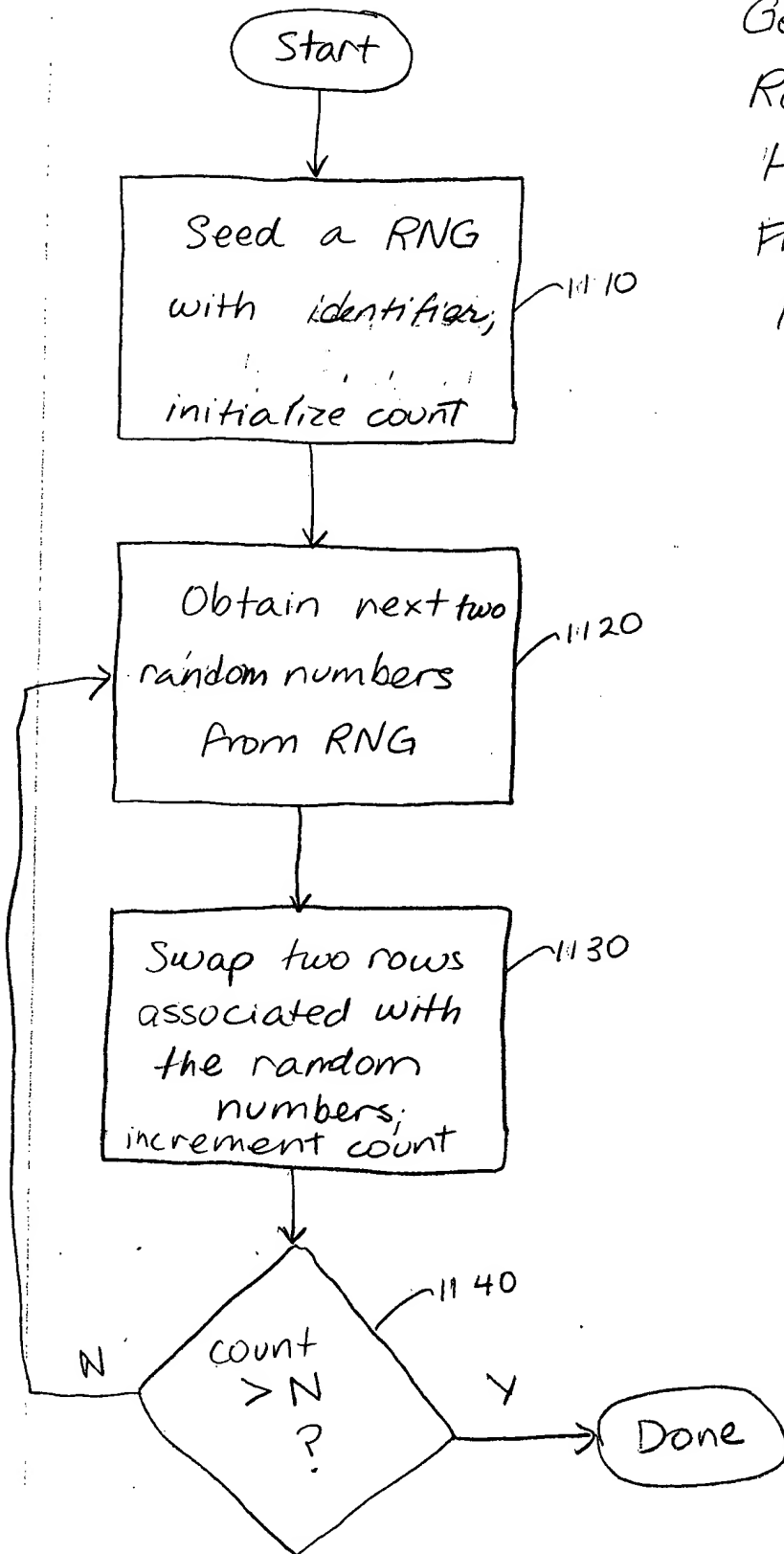


FIG. 13

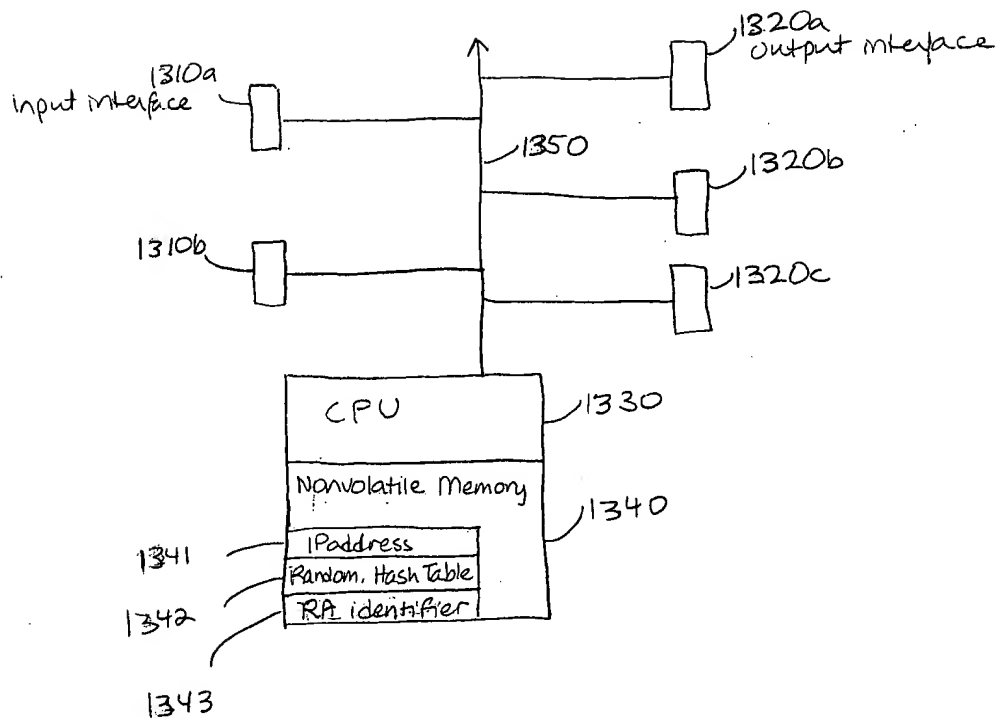


FIG. 14